

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer-implemented method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising:

~~identifying, with a computer, a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;~~

~~comparing a colorant value of each of the surrounding pixels with a corresponding colorant value of the first pixel;~~

~~wherein comparing further comprises determining, with the computer, a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixels to obtain a trigger value for each of the surrounding pixels;~~

~~adjusting, with the computer, the trigger values according to the distance between the first pixel and each surrounding pixel to obtain a distance adjusted trigger value for each of the surrounding pixels;~~

~~comparing, with the computer, the adjusted trigger values for each of the surrounding pixels to a trigger threshold;~~

~~identifying, with a computer, one any of the surrounding pixels to control trapping of the first pixel where the adjusted trigger value for the surrounding pixel exceeds the trigger threshold;~~

~~identifying, with the computer, a trigger pixel from the surrounding pixels with the adjusted trigger value that exceeds the trigger threshold with a maximum trigger value;~~
and

~~trapping, with the computer, the first pixel based on a relationship between a colorant values of the first pixel and a corresponding colorant values of the trigger pixel identified controlling pixel.~~

2. (Currently Amended) The method of claim 1, wherein the ~~plurality of surrounding pixels comprise a trapping window that~~ comprises a circular shape.

3. (Currently Amended) The method of claim 1, wherein the ~~plurality of surrounding pixels comprise a trapping window that~~ comprises an elliptical shape.

4.-7. (Cancelled)

8. (Currently Amended) The method of claim 1, ~~further comprising adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel~~ wherein each pixel that exceeds the trigger threshold indicates an edge that requires trapping.

9. (Currently Amended) The method of claim 1, wherein the ~~relationship comprises a difference between a colorant value of the identified pixel and a corresponding colorant value of the first pixel~~ the step of trapping pulls a trap from the trigger pixel to the first pixel.

10. (Previously Presented) The method of claim 1, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

11. (Currently Amended) A computer-implemented method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising:

identifying, with a computer, a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

evaluating, with the computer, a trigger function of a colorant value of each of the surrounding pixels and a corresponding colorant value of the first pixel;

wherein the function determines determining, with the computer, a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude

of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel to obtain a trigger value for each of the surrounding pixels;

identifying, with the computer, one of the surrounding pixels ~~to control trapping of the first with a maximum trigger value pixel as a trigger pixel~~; and

trapping, with the computer, the first pixel based on a ~~relationship between a~~ the colorant values of the first pixel and a ~~corresponding colorant values~~ of the identified ~~controlling trigger~~ pixel.

12. (Currently Amended) The method of claim 11, wherein the ~~plurality of surrounding pixels comprise a~~ trapping window that comprises a circular shape.

13. (Currently Amended) The method of claim 11, wherein the ~~plurality of surrounding pixels comprise a~~ trapping window that comprises an elliptical shape.

14-17. (Cancelled).

18. (Currently Amended) The method of claim 11, further comprising adjusting, with the computer, the ~~compared colorant trigger~~ values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel.

19. (Currently Amended) The method of claim ~~14~~ 18, wherein the ~~relationship comprises a difference between a colorant value of the identified pixel and a corresponding colorant value of the first pixel~~ trigger values are used to detect an edge between two different color values.

20. (Original) The method of claim 11, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

21. (Currently Amended) A computer-implemented method for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the method comprising:

identifying, with the computer, a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

evaluating, with the computer, a trigger function value associated with each of the surrounding pixels, each trigger function value comprising ~~a difference between the colorant values of the corresponding surrounding pixel and corresponding colorant values of the first pixel;~~

~~wherein the function value comprises a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel;~~

adjusting, with the computer, each of the trigger function values based on a distance between the corresponding surrounding pixel and the first pixel;

identifying, with the computer, the surrounding pixel associated with a maximum adjusted trigger function value; and

trapping, with the computer, the first pixel based on ~~a relationship between a colorant value of the first pixel and a corresponding colorant value of the surrounding pixel associated with the maximum adjusted trigger function value.~~

22. (Currently Amended) The method of claim 21, wherein the plurality of surrounding pixels comprise a trapping window that comprises a circular shape.

23. (Currently Amended) The method of claim 21, wherein the plurality of surrounding pixels comprise a trapping window that comprises an elliptical shape.

24-27. (Cancelled)

28. (Currently Amended) The method of claim 21, wherein the relationship comprises ~~a difference between a colorant value of the first pixel and a corresponding colorant value of the surrounding pixel associated with the maximum adjusted function~~

value trigger function values are used to detect an edge between two different color values.

29. (Original) The method of claim 21, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

30. (Currently Amended) Apparatus An apparatus for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the apparatus comprising:

means for identifying a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

~~means for comparing a colorant value of each of the surrounding pixels with a corresponding colorant value of the first pixel;~~

~~wherein the comparing means further comprises~~ means for determining a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel to obtain a trigger value for each of the surrounding pixels;

means for adjusting the trigger values according to the distance between the first pixel and each surrounding pixel to obtain a distance adjusted trigger value for each of the surrounding pixels;

means for comparing the adjusted trigger values for each of the surrounding pixels to a trigger threshold;

means for identifying one any of the surrounding pixels to control trapping of the first where the adjusted trigger value for the pixel exceeds the trigger threshold;

means for identifying a trigger pixel from the surrounding pixels with the adjusted trigger value that exceeds the trigger threshold with a maximum colorant difference value; and

means for trapping the first pixel based on a ~~relationship between a colorant values~~ of the first pixel and ~~a corresponding colorant values~~ of the trigger identified controlling pixel.

31. (Currently Amended) The apparatus of claim 30, wherein the ~~plurality of surrounding pixels comprise a trapping window that comprises a circular shape.~~

32. (Currently Amended) The apparatus of claim 30, wherein the ~~plurality of surrounding pixels comprise a trapping window that comprises an elliptical shape.~~

33-36. (Cancelled)

37. (Currently Amended) The apparatus of claim 30, ~~further comprising means for adjusting the compared colorant values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel~~ wherein each pixel that exceeds the trigger threshold indicates an edge that requires trapping.

38. (Currently Amended) The apparatus of claim 30, wherein the ~~relationship comprises a difference between a colorant value of the identified pixel and a corresponding colorant value of the first pixel~~ means for trapping pulls a trap from the trigger pixel to the first pixel.

39. (Original) The apparatus of claim 30, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

40. (Currently Amended) An apparatus for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the apparatus comprising:

means for identifying a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

means for evaluating a trigger function of a colorant value of each the surrounding pixels and a corresponding colorant value of the first pixel;

wherein the means for ~~evaluating determines~~ determining a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a magnitude of a sum of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel to obtain trigger value for each of the surrounding pixels;

means for identifying one of the surrounding pixels ~~to control trapping of the first~~ with a maximum trigger value as a trigger pixel; and

means for trapping the first pixel based on ~~a relationship between a colorant values of the first pixel and a corresponding colorant values of the identified controlling~~ trigger pixel.

41. (Currently Amended) The apparatus of claim 40, wherein the ~~plurality of surrounding pixels comprise a trapping window that comprises a circular shape.~~

42. (Currently Amended) The apparatus of claim 40, wherein the ~~plurality of surrounding pixels comprise a trapping window that comprises an elliptical shape.~~

43-46. (Cancelled)

47. (Currently Amended) The apparatus of claim 40, further comprising means for adjusting the ~~compared colorant~~ trigger values of each of the surrounding pixels based on a corresponding distance between the surrounding pixel and the first pixel.

48. (Currently Amended) The apparatus of claim 40, wherein the ~~relationship comprises a difference between a colorant value of the identified pixel and a corresponding colorant value of the first pixel~~ trigger values are used to detect an edge between two different color values.

49. (Original) The apparatus of claim 40, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

50. (Currently Amended) An apparatus for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the apparatus comprising:

means for identifying a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

means for evaluating a trigger function value associated with each of the surrounding pixels, each trigger function value comprising a difference between the colorant values of the corresponding surrounding pixel and corresponding colorant values of the first pixel;

~~wherein the means for evaluating determines~~ a difference between a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel, and a sum of magnitudes of differences between colorant values of each of the surrounding pixels and corresponding colorant values of the first pixel;

means for adjusting each of the trigger function values based on a distance between the corresponding surrounding pixel and the first pixel;

means for identifying the surrounding pixel associated with a maximum adjusted trigger function value; and

means for trapping the first pixel based on ~~a relationship between a colorant values of the first pixel and a corresponding colorant values of the surrounding pixel associated with the maximum adjusted~~ trigger function value.

51. (Currently Amended) The apparatus of claim 50, wherein the ~~plurality of surrounding pixels comprise~~ a trapping window that comprises a circular shape.

52. (Currently Amended) The apparatus of claim 50, wherein the ~~plurality of surrounding pixels comprise~~ a trapping window that comprises an elliptical shape.

53-56.(Cancelled)

57. (Currently) The apparatus of claim 50, wherein the ~~relationship comprises a difference between a colorant value of the first pixel and a corresponding colorant value~~

of the surrounding pixel associated with the maximum adjusted function-value trigger function values are used to detect an edge between two different color values.

58. (Original) The apparatus of claim 50, wherein the colorant values comprise cyan, magenta, yellow and black colorants.

59. (Currently Amended) An apparatus for electronically trapping a first digital color image pixel comprising a plurality of colorant values, the apparatus comprising:

a memory adapted to store a trapping window comprising a plurality of pixels that surround the first pixel, each of the surrounding pixels comprising a plurality of colorant values;

a first logic element adapted to sum magnitudes of the differences associated with each of the surrounding pixels and subtract therefrom a magnitude of a sum of the differences associated with each of the surrounding pixels;

a second logic element adapted to determine the surrounding pixel associated with the sum from the first logic element; and

a third logic element adapted to identify the trigger pixel having the maximum sum;

a fourth logic element adapted to trap the first pixel based on a relationship between a colorant values of the first pixel and a corresponding colorant values of the surrounding trigger pixel determined by the second third logic element.

60. (Currently Amended) The apparatus of claim 59, wherein the first, second, and third logic, and fourth logic elements comprise pipelined logic elements.

61-64. (Cancelled).